

(No Model.)

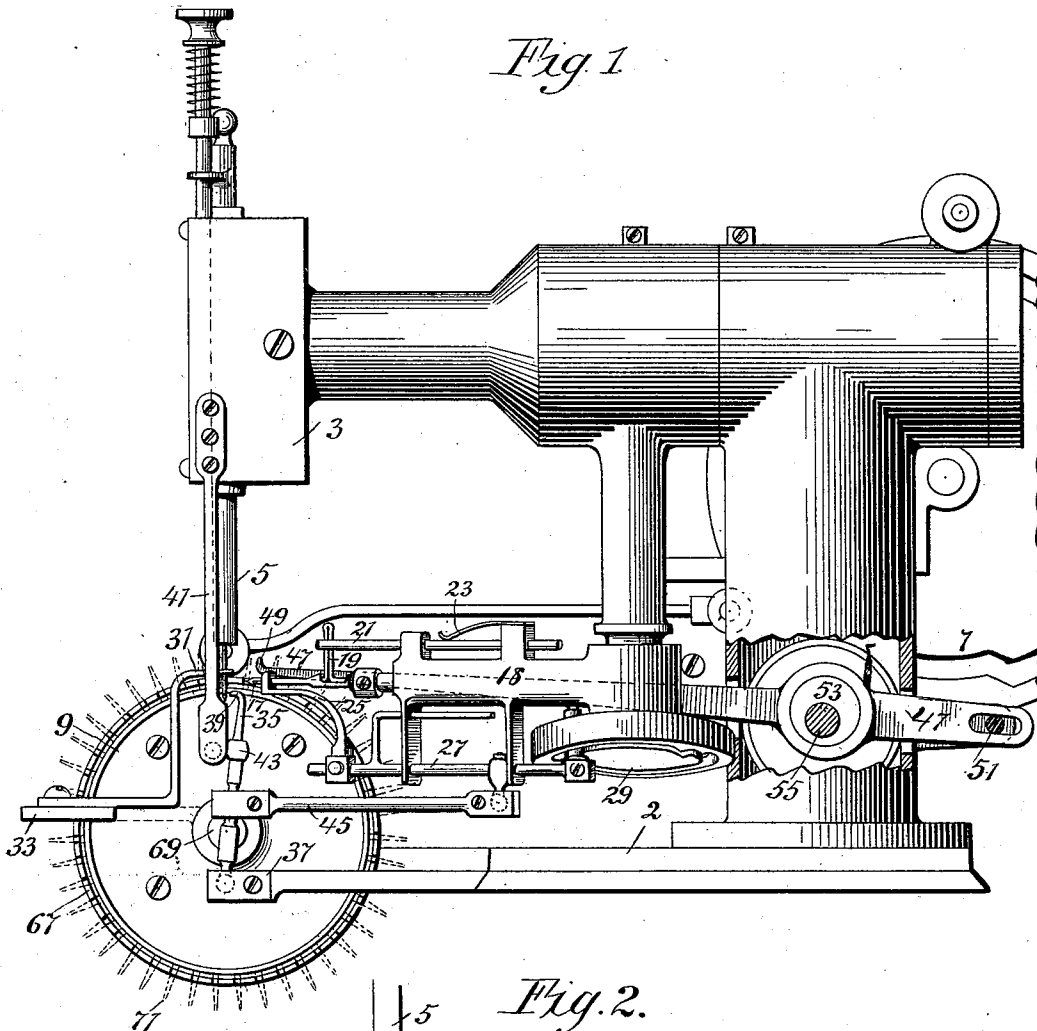
3 Sheets—Sheet 1.

G. D. MUNSING.  
CROCHETING MACHINE.

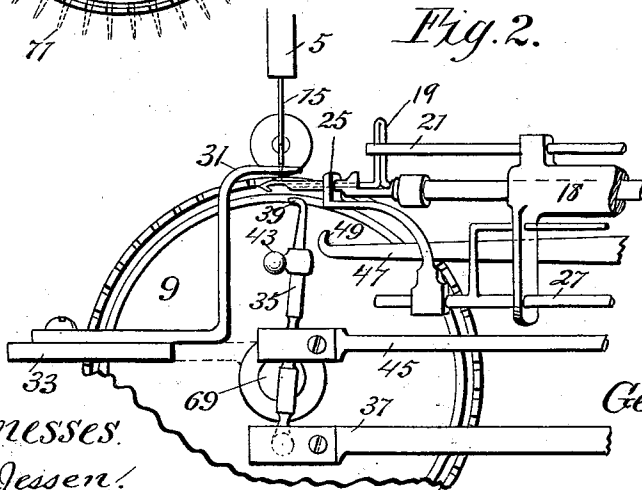
No. 507,238.

Patented Oct. 24, 1893.

*Fig 1*



*Fig. 2.*



*Witnesses.*

*J. Jessen.*

*C. E. Van Nostrand.*

*Inventor.*

*George D. Munsing.*

*By Paul & Merriam*  
*Attorneys.*

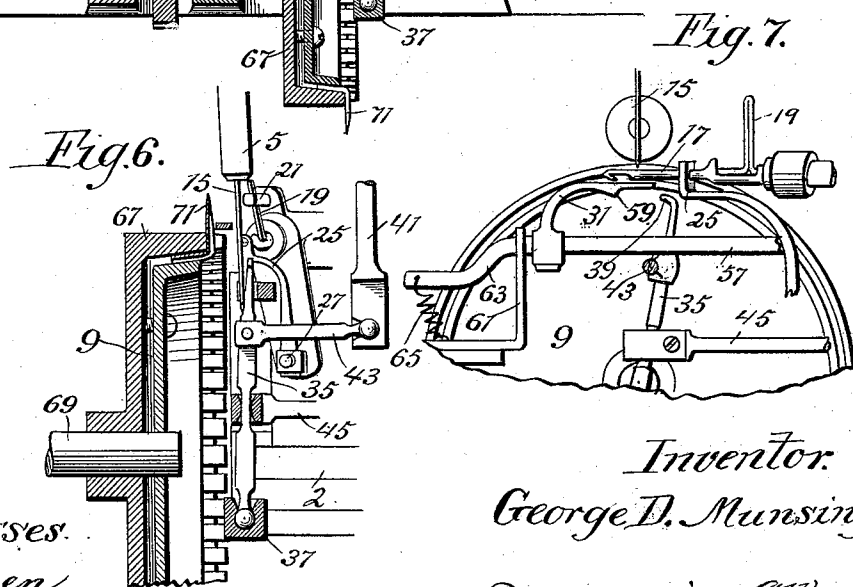
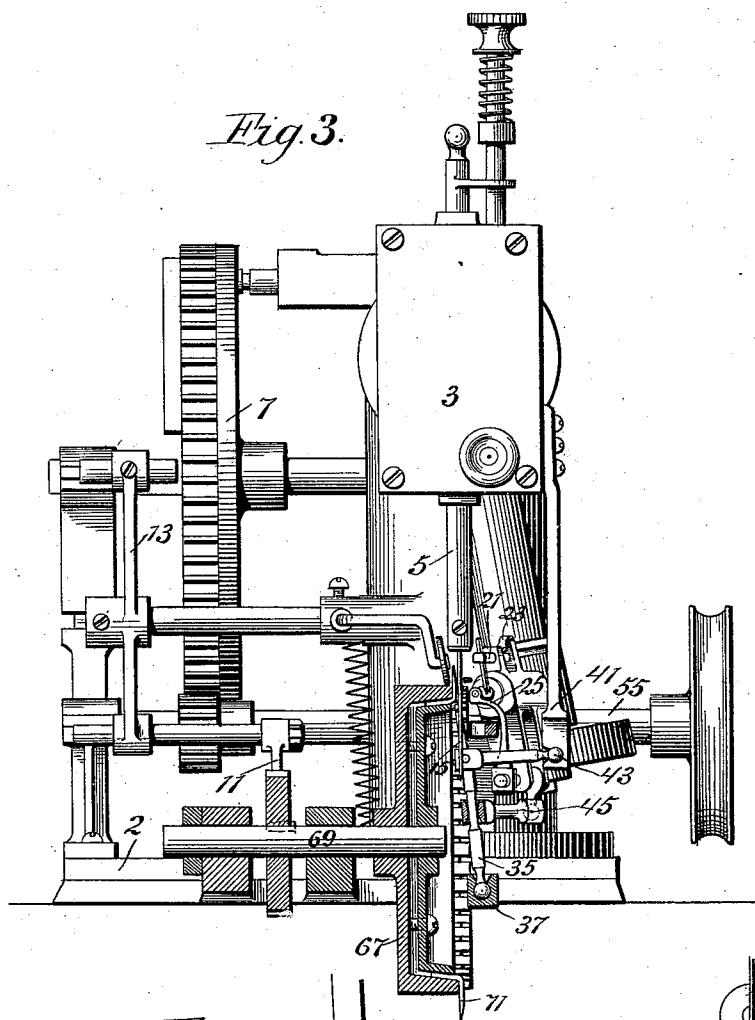
(No Model.)

3 Sheets—Sheet 2.

G. D. MUNSING.  
CROCHETING MACHINE.

No. 507,238.

Patented Oct. 24, 1893.



Witnesses.

J. Jensen.  
C. E. Van Dorem.

*Inventor.*  
George D. Munsing.

*By Paul & Munn Attys.*

(No Model.)

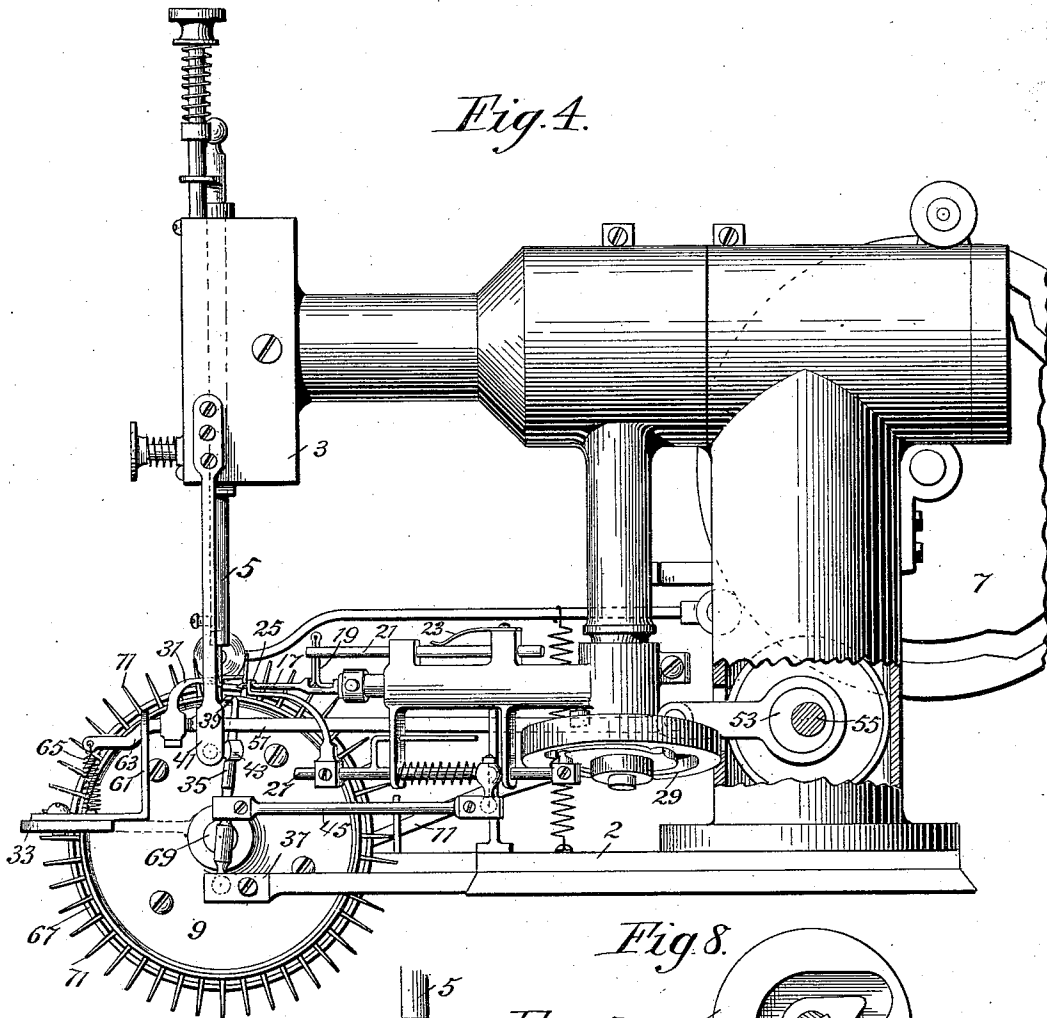
3 Sheets—Sheet 3.

G. D. MUNSING.  
CROCHETING MACHINE.

No. 507,238.

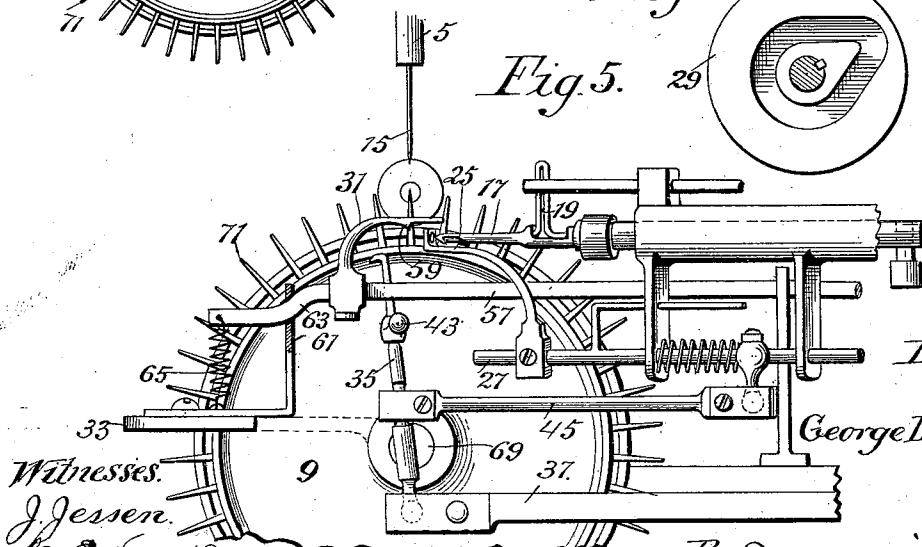
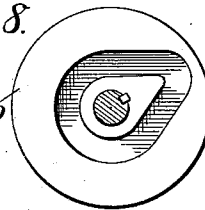
Patented Oct. 24, 1893.

*Fig. 4.*



*Fig. 8.*

*Fig. 5.*



*Inventor.*

*George D. Munsing*

*Witnesses.*  
*J. J.essen.*  
*C. C. Van Dorst.*

*By Paul & Co. Attys*

# UNITED STATES PATENT OFFICE.

GEORGE D. MUNSING, OF MINNEAPOLIS, MINNESOTA.

## CROCHETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,238, dated October 24, 1893.

Application filed August 21, 1890. Serial No. 362,590. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE D. MUNSING, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Crocheting-Machines, of which the following is a specification.

This invention relates to improvements in machines used especially for the manufacture of scallop or shell-work, and the present invention is an improvement on that shown and described in my Patent No. 411,046, dated September 17, 1889.

The object of the present invention is to simplify and improve the construction of the machine shown in my said former patent.

In the present invention the reciprocating looper or latch needle does not have any lateral movement but an independent loop carrier is employed that co-operates with the eye needle and takes the loop on the under side of the fabric or at the inner point of the shell or scallop and carries it out to the outer edge of the scallop and holds it in that position till after the needle passes through it. The reciprocating looper or latch needle then co-operates with the eye-needle to complete the stitch at the outer edge of the scallop.

Other features of the invention will be understood from the following detailed description taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, of my improved machine. Fig. 2 is a similar view of a portion of the machine, the parts being in a different position. Fig. 3 is a sectional end elevation. Fig. 4 is a view similar to Fig. 1 showing a slightly modified construction. Figs. 5, 6 and 7 are details of a portion of the machine shown in Fig. 4. Fig. 8 is a detail view of one of the cams.

In the drawings, 2 represents the frame of the machine which may be of any suitable construction and formed of any suitable material. The part of the frame 3 which supports the needle bar 5 has a lateral or rocking motion imparted to it by the cam wheel 7. A suitable feed-wheel 9, preferably spurred, as shown, has a step-by-step motion given to it by suitable means, as the ratchet bar 11 operated by the cam wheel 7 through the intermediate lever 13. The eye-needle 15 carried by the needle bar 5 has a vertical

reciprocating motion and a lateral or sidewise motion toward and from the feed wheel.

A looper or latch needle 17 is arranged to longitudinally reciprocate transversely to the line of reciprocation of the needle 15. This looper is preferably provided with a sliding latch 19 connected to a sliding rod 21 and held in position by a spring 23 which latter exerts pressure upon the rod and acts as a brake to hold the rod and latch stationary during a portion of the stroke of the looper while permitting them to accompany the looper during the balance of its stroke. The needle and the looper are preferably reciprocated by means similar to those described in my former patent referred to, and the motions of these parts are similar to the motions of these parts in my said former patent, except that the looper has no other movement than a reciprocating one, being held in a stationary support 18. As described in my said prior patent the sliding latch 19 is provided with a projection which is received between shoulders on the rod 21, the latter being supported to move longitudinally in bearings, but held from motion by the friction of a spring 23, which is sufficient to overcome the friction between the looper and the latch carried thereby. Reciprocating motion being given the looper, as it moves forward the latch remains stationary until the shoulder of the slot in the looper engages the projection on the latch, when the latter will accompany the looper, the friction of the spring being overcome, and the throat of the hook uncovered. Upon the return motion of the looper to grasp the thread, the latch is held in its advanced position, but away from the hook until the thread has entered when, the latch being stationary the hook impinges against it, closing the throat, and causing the latch to be retracted with the looper. During the retreat of the looper, after the latch has been engaged by the hook, the throat is closed by the latch, the spring operating to retard the movement of the latch and hold it against the hook, but as soon as the motion of the looper is reversed and it begins to move forward, the latch is held against motion by its spring until the projection is again engaged by the shoulder on the looper, and the hook is opened and remains open until during the return

stroke of the looper its hook again encounters the latch and is closed thereby. The looper 17 is arranged to pass through a stitch or loop caster 25 that is carried by a sliding rod 27 whose movements are controlled by a cam wheel 29.

A finger or horn 31 is secured upon a suitable support 33 and is arranged in close proximity to the feed wheel.

35 represents the loop-carrier. It consists preferably of an arm pivotally supported in a socket formed in a stationary support 37 on the frame of the machine. This carrier is provided with a lug or finger 39, and it is connected to the oscillating part of the frame by a bar 41 to which it is pivotally connected by an arm 43. The loop-carrier 35 is also connected to a bar or rod 45 which is controlled by the cam wheel 29 operating thereon through a connection carried by rod 27. The loop-carrier is thus given two motions one toward and from the feed wheel and the other at substantially right angles thereto.

47 represents a loop-holder that engages the loop on the looper and the part of the shell already formed when the looper is about to advance, so that as the looper advances the loop is held and the looper passes through it and the loop comes onto the shank of the looper above the latch and is then cast off, when the looper is retracted, and passes over the loop that is then in the hook of the looper completing the stitch. This loop-holder 47 consists of a bar that is provided with an up-turned end or finger 49 and its opposite end is slotted and mounted on a pin 51. The loop-holder is also mounted on an eccentric 53 on the shaft 55. By this means the loop-holder is given an up and down motion and also a back and forth motion.

In the construction shown in Figs. 4, 5, 6 and 7 the loop-holder is omitted and its place is supplied by the horn or finger 31, that in this instance is mounted on a bar 57 that is arranged on the eccentric 53. The horn is provided with the projection 59 that engages the loop and holds it on the looper. The bar 57 passes through a stationary upright 61 and is provided with an incline 63 and a spring 65 is connected to its end and to a stationary part of the machine frame. By this means the horn or finger 31 is raised up as it is drawn back toward the looper and it thereby raises the work and at the same time as it moves toward the looper it holds the loop thereon.

The feed-wheel that I prefer to use consists of a flanged disk 67 secured upon a shaft 69 with a second flanged disk secured therein. The spurs 71 are clamped between the flanges of these disks. The flange of the disk 67 is preferably slotted and the spurs project through these slots and the needle also descends through these slots as shown in Fig. 3. This insures the carrying of the thread or yarn into position to be engaged by the loop-carrier. Without this the thread might

draw at an angle from the loop last formed and be in such position that the loop carrier would not engage it.

The operation is as follows: The scallops or shells may be formed on or secured to the edge of a fabric already formed. This fabric may be made up of similar shells or scallops or it may be any other kind of fabric. The descending needle passes through the fabric near to its edge and close to the feed-wheel, going through the slots in the flange of the disk 67, where the center or inner point of the shell is formed. The loop-carrier then engages the thread or yarn in the needle and holds it as the needle rises. The needle and loop-carrier then move laterally or away from the feed-wheel. The needle again descends through the loop on the loop-carrier which then drops the loop. As the needle rises this time the looper moves forward. The loop now on the looper is held by the loop-holder in the construction shown in Figs. 1, 2 and 3 or by the horn or finger in the construction shown in the other figures, and this loop as the looper advances comes onto the shank of the looper above the latch. The looper takes the thread on the needle. The needle rises, casting the loop carried by it. The looper retracts, its latch closing, and the loop above its latch is cast off while the loop last taken remains in the hook of the looper. The needle now moves back toward the feed wheel, and the operations are repeated.

The shape of the scallop or shell is governed by the lateral movements of the needle and these are controlled by the cam wheel.

I claim as my invention—

1. The combination of a reciprocating and laterally movable thread carrying needle, a loop carrier engaging the needle thread during one stroke of the needle and moving the same laterally for the passage therethrough of the needle during a succeeding stroke, and a reciprocating latched looper engaging the needle thread after the passage of the needle through the loop and below the latter; substantially as described.

2. The combination of a reciprocating and laterally movable thread carrying needle; a loop carrier movable laterally of the needle and cooperating with the latter to engage the thread during one reciprocation of the needle and present the loop for the passage of the needle during a subsequent reciprocation of the latter; a reciprocating latched looper engaging the thread carried by the needle; and a loop-holder cooperating with the looper, substantially as described.

3. The combination with a reciprocating and laterally movable needle, a laterally movable loop-carrier, a reciprocating latched looper, and a loop caster; substantially as described.

4. The combination with a reciprocating needle movable laterally to reciprocate in different planes; of a horn or finger located intermediate the planes in which the needle re-

reciprocates; a loop-carrier movable laterally of said horn; and a latched looper cooperating with the needle to engage the thread; substantially as described.

5 5. The combination with a feed-mechanism for advancing the material intermittingly, of  
a laterally movable thread carrying needle  
10 reciprocating in different planes and several  
times in each plane in the interval between  
the feeding movements; with mechanism for  
controlling and effecting said movements of  
the needle; a loop-carrier engaging the needle  
15 thread when the needle reciprocates in one  
plane and presenting the loop to the needle  
when the latter reciprocates in the other plane  
and mechanism operating upon the loop carrier  
to effect said movements; and a reciprocating  
20 looper cooperating with the needle when  
reciprocating in one plane only with  
mechanism for effecting said movements, substantially  
as described.

6. The combination with a feed-mechanism  
operating to advance the material after the  
formation of a series of stitches by the stitch-  
25 forming devices, of a reciprocating thread  
carrying needle movable laterally to reciprocate  
in different planes; a finger or horn located  
intermediate the two planes of reciprocation  
of the needle; a laterally movable loop-  
30 carrier and a reciprocating latched looper,  
substantially as described.

7. The combination with intermitting feed-  
mechanism provided with a spurred feed  
wheel notched for the passage of a needle, of  
35 a reciprocating needle movable laterally of  
the feed wheel to alternately reciprocate in  
the notches and at a distance therefrom; a  
loop-carrier movable laterally of the line of  
feed movement; and a looper engaging the  
40 needle thread during the reciprocations which  
occur while the needle is removed laterally  
from the feed wheel; substantially as described.

8. The combination with intermitting feed-  
45 mechanism, of a stitch forming mechanism  
comprising a thread carrying needle movable  
laterally to reciprocate alternately in different  
vertical planes; a loop carrier movable  
laterally of the needle and cooperating with  
50 the latter to engage the thread during the  
reciprocation nearest the feed mechanism  
and present the loop for the passage of the  
needle during the reciprocation more remote  
from the feed mechanism; a reciprocating  
55 looper engaging the needle thread after the

needle has entered the loop borne by the loop  
carrier and actuating devices intermediate  
the needle, loop-carrier and looper operating  
thereon to effect the said relative movements  
of those elements; substantially as described. 60

9. The combination with an intermitting  
feed mechanism and a horn or finger adjacent  
thereto, of a reciprocating needle movable  
laterally of the line of feed movement and  
65 above the horn, to reciprocate alternate  
opposite sides of the latter; a loop carrier  
engaging the needle thread as the needle  
reciprocates on one side of the horn; and a  
looper engaging the needle thread as the needle  
70 reciprocates on the opposite side of the  
horn; substantially as described.

10. The combination with a feed mechanism  
for engaging holding and advancing the  
fabric, of a horn or finger; a thread carrying  
needle reciprocating alternately on opposite  
75 sides of said horn or finger; a loop-carrier  
cooperating with the needle on one side of said  
horn to engage the thread and carry the loop  
to the other side of the horn; a looper cooperating  
with the needle on the opposite side  
80 of the horn, to engage the needle thread; and  
a loop-holder cooperating with the looper to  
retain the loop upon the looper as the latter  
is advanced to grasp the needle thread; substantially  
as described. 85

11. In combination with the laterally movable  
reciprocating needle its laterally movable  
support and the reciprocating looper, the  
loop-carrier pivotally supported beneath the  
needle and connected to the laterally movable  
90 needle support to move in unison with the  
needle, and a cam and intermediate connections  
for effecting a movement of said carrier  
toward and from the needle; substantially as  
described. 95

12. The combination with feeding mechanism,  
a laterally movable reciprocating needle  
and a laterally movable loop-carrier, of a  
reciprocating looper engaging the needle thread  
at alternate reciprocations of the needle, and  
100 a loop holder movable between the looper and  
needle to engage the loop carried by the looper;  
substantially as described.

In testimony whereof I have hereunto set  
my hand this 18th day of August, 1890.

GEORGE D. MUNSING.

In presence of—  
A. M. GASKILL,  
BESSIE BOOTH.